

$\Xi_c(2815)$

$$I(J^P) = \frac{1}{2}(\frac{3}{2}^-) \text{ Status: } ***$$

A narrow peak seen in the $\Xi_c \pi \pi$ mass spectrum. The simplest assignment is that this belongs to the same SU(4) multiplet as the $\Lambda(1520)$ and the $\Lambda_c(2625)$, but the spin and parity have not been measured.

NODE=B148

NODE=B148

$\Xi_c(2815)$ MASSES

NODE=B148205

The masses are obtained from the mass-difference measurements that follow.

NODE=B148205

$\Xi_c(2815)^+$ MASS

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|---------|-------------|------|-------------------------------------|
| 2816.6 ± 0.9 OUR FIT | | | | |
| 2817.0 ± 1.2^{+0.7}_{-0.8} | 73 ± 10 | LESIAK | 08 | BELL $e^+ e^- \approx \Upsilon(4S)$ |

NODE=B148M+
NODE=B148M+

SYCLP2=F

$\Xi_c(2815)^0$ MASS

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|--------|-------------|------|-------------------------------------|
| 2819.6 ± 1.2 OUR FIT | | | | |
| 2820.4 ± 1.4^{+0.9}_{-1.0} | 48 ± 8 | LESIAK | 08 | BELL $e^+ e^- \approx \Upsilon(4S)$ |

NODE=B148M0
NODE=B148M0

SYCLP2=F

$\Xi_c(2815) - \Xi_c$ MASS DIFFERENCES

NODE=B148207

$m_{\Xi_c(2815)^+} - m_{\Xi^+}$

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|----------------------------|------|-------------|------|-------------------------------------|
| 348.8 ± 0.9 OUR FIT | | | | |
| 348.6 ± 0.6 ± 1.0 | 20 | ALEXANDER | 99B | CLE2 $e^+ e^- \approx \Upsilon(4S)$ |

NODE=B148D+
NODE=B148D+

$m_{\Xi_c(2815)^0} - m_{\Xi^0}$

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|----------------------------|------|-------------|------|-------------------------------------|
| 348.7 ± 1.2 OUR FIT | | | | |
| 347.2 ± 0.7 ± 2.0 | 9 | ALEXANDER | 99B | CLE2 $e^+ e^- \approx \Upsilon(4S)$ |

NODE=B148D0
NODE=B148D0

$\Xi_c(2815)^+ - \Xi_c(2815)^0$ MASS DIFFERENCE

NODE=B148208

$m_{\Xi_c(2815)^+} - m_{\Xi_c(2815)^0}$

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---------------------------|-------------|------|---------------------|
| -3.1 ± 1.3 OUR FIT | | | |
| -3.4 ± 1.9 ± 0.9 | LESIAK | 08 | BELL 73 & 48 events |

NODE=B148DD
NODE=B148DD

SYCLP2=F

$\Xi_c(2815)$ WIDTHS

NODE=B148210

$\Xi_c(2815)^+$ WIDTH

| VALUE (MeV) | CL% | DOCUMENT ID | TECN | COMMENT |
|----------------|-----|-------------|------|-------------------------------------|
| <3.5 | 90 | ALEXANDER | 99B | CLE2 $e^+ e^- \approx \Upsilon(4S)$ |

NODE=B148W+
NODE=B148W+

$\Xi_c(2815)^0$ WIDTH

| VALUE (MeV) | CL% | DOCUMENT ID | TECN | COMMENT |
|----------------|-----|-------------|------|-------------------------------------|
| <6.5 | 90 | ALEXANDER | 99B | CLE2 $e^+ e^- \approx \Upsilon(4S)$ |

NODE=B148W0
NODE=B148W0

$\Xi_c(2815)$ DECAY MODES

NODE=B148215;NODE=B148

The $\Xi_c \pi \pi$ modes are consistent with being entirely via $\Xi_c(2645)\pi$.

NODE=B148

| Mode | Fraction (Γ_i/Γ) |
|--------------------------------------|--------------------------------|
| $\Gamma_1 \quad \Xi_c^+ \pi^+ \pi^-$ | seen |
| $\Gamma_2 \quad \Xi_c^0 \pi^+ \pi^-$ | seen |

DESIG=1;OUR EST

DESIG=2;OUR EST

$\Xi_c(2815)$ REFERENCES

NODE=B148

LESIAK 08 PL B665 9
ALEXANDER 99B PRL 83 3390

T. Lesiak *et al.*
J.P. Alexander *et al.*

(BELLE Collab.)
(CLEO Collab.)

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